

# Statewide Rail Capacity and System Needs Study

## Final Report



*presented to*

**Washington State  
Transportation Commission**

*presented by*

**Cambridge Systematics, Inc.  
Berk & Associates, Inc.  
Global Insight, Inc.**

**HDR, Inc.**

**Starboard Alliance Company  
Transit Safety Management**

**December 12, 2006**



Washington State  
Transportation Commission

**CAMBRIDGE**  
SYSTEMATICS

# **Final Report**

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- 1.0 Executive Summary**
- 2.0 Introduction and Background**
- 3.0 Washington State Rail System, Rail Users, Capacity, and Issues**
- 4.0 Washington State Powers, Authorities, and Interests**
- 5.0 Policy Recommendations**

**Appendix A. Illustrative Case Study**

**Appendix B. Glossary**

# CDs - Technical Memoranda and Supporting Documents

- **Washington State's Freight Rail System (TM 1.1.A)**
- **Washington State's Passenger Rail System (TM 1.1.B)**
- **Washington State Rail Traffic (T-1.2.A)**
- **Profiles of Freight Rail Users in Washington State (TM 1.2.B)**
- **Economic Growth and Demand (T-2.1.A)**
- **Freight Transportation Demand Forecasts (TM 2.1.B)**
- **Industry Logistics and Supply Chains (TM 2.2)**
- **Rail Capacity Needs and Constraints (TM 3)**
- **Rail Operations: Strategies and Improvements (TM 4)**
- **National Funding Opportunities (TM 6)**
- **Rationale for Washington State Investment in Private Rail (TM 7)**
- **Policy and Investment Options (TM 8)**
- **Assessment Management Plan (TM 9)**

# CDs - Technical Memoranda and Supporting Documents (cont.)

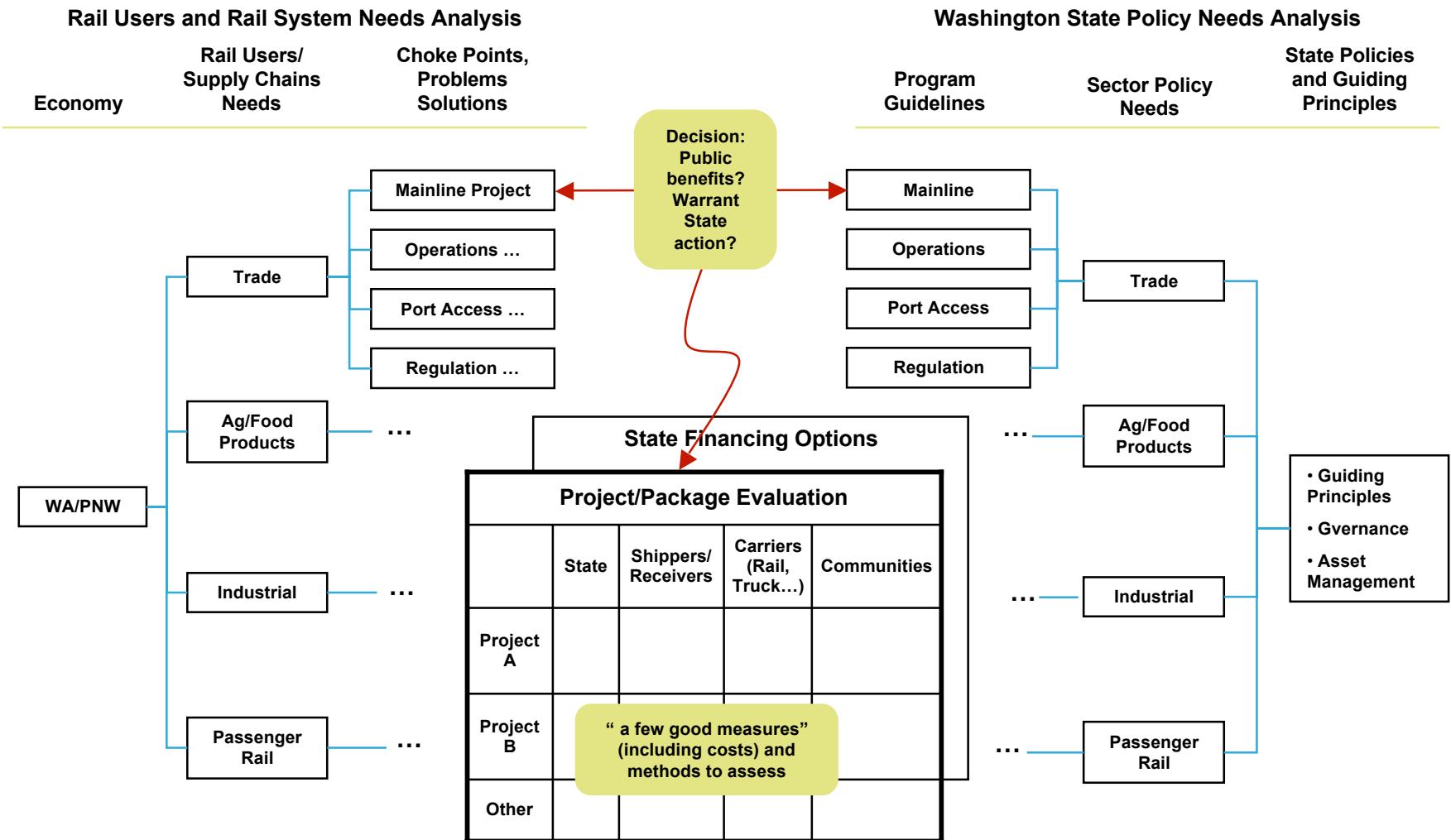
- Analytical Plan; Investment Plan; and Rail Operations Forum (TM 10.1, 10.2, and 10.3)
- Outreach Plan
- Stakeholder Interview Summary
- Regional Listening Sessions Summary
- Technical Resource Panel Membership
- Statewide Rail Capacity and Needs Study: First Interim Report
- Statewide Rail Capacity and Needs Study: Second Interim Report

# Study Mandate

- **Assess rail needs in the State**
- **Determine the State's interest in the rail system**
- **Develop policies to govern the State's participation in the rail system, and**
- **Develop a plan for managing the rail lines, railcars, and service rights owned by the State**

*The key question asked by the Legislature for this study was:  
“Should the State continue to participate in the freight and passenger rail system, and if so, how can it most effectively achieve public benefits?”*

# Washington State Rail Study Framework



## State Rail Issues

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- Railroads are focusing on high-volume and long-haul services, but the state's industrial and agricultural shippers also need low volume and short-haul services
- Rail is being asked to absorb some of the traffic growth from congested highways
- Short line railroads are being asked to support agricultural shippers and communities, and
- Intercity passenger rail program is being asked to increase ridership

# Policy Recommendation One

- Washington State should continue to participate in the preservation and improvement of both the freight and passenger rail transportation system where there are public benefits to Washington State, its businesses, and its communities.
  - The study provides guidance on how state actions can be used to address the needs of carload industrial shippers, agricultural shippers, ports and international trade industries, and the passenger-rail users.
  - These include suggestions for mainline, terminal, and access improvements; development of consolidation facilities and shipper rail sidings; assistance to short line railroads; and mitigation of rail impacts on Washington communities.

# Washington State Rail System

# Major Rail Users

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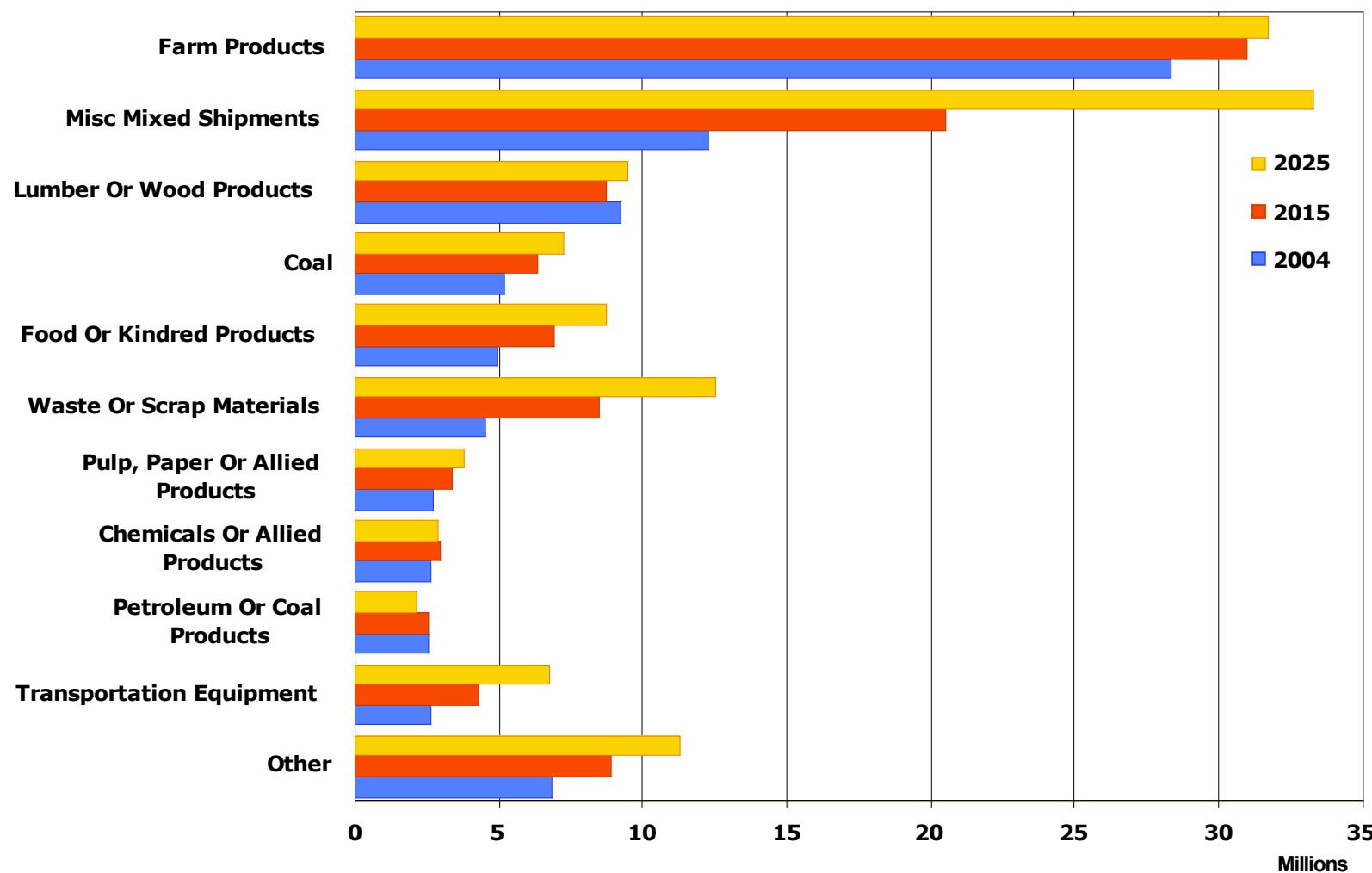
- Manufacturers/industrial carload shippers
- Ports and international trade sector/intermodal container shippers
- Agriculture and foods products industry/bulk and specialized carload shippers
- Intercity and commuter passenger rail riders

## Outlook

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- The Washington State rail system is nearing capacity; service quality is strained, and rates are going up.
- The Class I railroads are adjusting their operations to increase the volume of freight moved through the system over the existing rail lines, but the operational changes may not be sufficient to satisfy the future needs of Washington shippers.
- Capacity shortfalls will complicate the improvement of intercity passenger rail service.

# Washington State Rail Tonnage by Commodity Current (2004) and Forecast (2015 and 2025)



# Washington State Rail System Mainline Capacities, 2006

# Washington State Rail System Rail Choke Points, 2006

## Policy Recommendation Two

- The State should base its decisions to participate in projects, programs, and other rail initiatives on a systematic assessment and comparison of benefits and costs across users and across modes.
  - The State should estimate quantifiable costs and benefits; economic impacts; and qualitative benefits for the State, rail users, the railroads and other carriers, and communities.
  - Where appropriate, these benefits and impacts should be compared to the benefits and impacts of alternative investments in truck and barge services for freight, and the benefits and impacts of alternative investments in highway, bus, ferry, and air services for passengers.

# Sample Decision Matrix for Comparison of Alternative Rail Projects and Actions

	Measures	No Action	Alternative A	Alternative B
State	Jobs			
	Tax/Fee Benefits			
	System Efficiency			
	Environmental Benefits			
	Safety Benefits			
	Partner Funding			
	Cost to State			
	Benefit-Cost			
<i>Summary State</i>				
Shippers	Business Cost Impacts			
	Access to Service			
	Service Reliability			
	Transit Time			
<i>Summary Shippers</i>				
Passengers	Rail Capacity for Passenger			
	Trains			
	Travel Costs			
	Travel Time			
	Increased Modal Choice			
<i>Summary Passengers</i>				

# Sample Decision Matrix for Comparison of Alternative Rail Projects and Actions

	Measures	No Action	Alternative A	Alternative B
Railroads	System Velocity Improvements			
	Hours of Train Delay			
	Yard Dwell Time			
	Increased Revenue Traffic			
	Equipment Utilization			
<i>Summary Railroads</i>				
Ports	Throughput			
	Market Share			
<i>Summary Ports</i>				
Communities	Environmental Benefits			
	Safety Benefits			
	Reduced Roadway Delays			
	Local Jobs			
<i>Summary Communities</i>				
National	Pct Benefits in WA State			
	Other States Benefiting			
<i>Summary National</i>				

# Using Cross-User Group Comparison to Determine Appropriate State Role

Proposed Action	WA State	Shippers	Passengers	Railroads	Community	Likely Recommendation	Level of Action	Example
A	H	H	H	H	H	State should participate, but only if other beneficiaries contribute appropriate share	Consider direct investment and supporting legal and institutional mechanisms	Consider sources such as additional dedicated state freight rail funds, Federal funding sources through the SAFETEA-LU, and other state matching sources
B	H	L	L	L	H	State should participate and be prepared to contribute more than other groups	Consider direct investment and supporting legal and institutional mechanisms	Consider sources such as additional dedicated state freight rail funds, Federal funding sources through SAFETEA-LU, and other state matching sources
C	M	M	M	M	M	State should participate with caution and only if costs to do so are low	Consider tax exempt financing loans or other methods that have limited costs to State, but benefit private industry	Consider public-private partnerships, tax credits, and other non-financing incentives
D	L	H	H	H	L	State should probably not participate	State should probably not participate with financial, institutional, or legal mechanisms	No state role is anticipated
E	L	L	L	L	L	State should probably not participate	State should probably not participate with financial, institutional, or legal mechanisms	No state role is anticipated

## Policy Recommendation Three

- Where the State determines there are sufficient public benefits to justify public participation in the preservation and improvement of the rail transportation system, its actions should be guided by the following general principles:
  - Emphasize operations and non-financial participation in projects before capital investment;
  - Preserve and encourage competition;
  - Target actions to encourage private investment that advances Washington State economic development goals;
  - Leverage state participation by allocating cost responsibility among beneficiaries; and
  - Require projects to have viable business plans.

## Policy Recommendation Four

- The State should designate a single entity to coordinate and direct the State's participation in the preservation and improvement of the rail transportation system.
  - This entity should have the authority to negotiate directly with the railroads.
  - The Class I railroads are large national corporations. The State can be an effective advocate for a multiplicity of state, business, and community interests, but cannot do so without a coordinated and unified vision and voice.
  - Responsibility for oversight and management of Washington State's rail programs and investments is currently divided among WSDOT, FMSIB, CERB, and WSUTC.

## Policy Recommendation Five

- **The State should develop a multistate coalition to address rail system needs across the Pacific Northwest.**
  - **The Washington State rail system is an integral part of the Pacific Northwest and national rail systems; the rail system's needs transcend the State's boundaries.**
  - **Washington State and its neighbors should establish their common needs and work with the railroads to prioritize and invest in the most cost-beneficial regional improvements.**
  - **The State should also play an active role in national rail policy discussions. Washington State's rail issues are similar to those in other states, reflecting the need for a coordinated national rail strategy.**

## Policy Recommendation Six

- The State should implement the asset management plan developed as part of this study to govern investment and management decisions for state-owned rail assets.
  - The asset management plan sets objectives for the rail lines, specialized railcars, and service rights that the State owns; establishes performance measures to determine if these objectives are being met; and describes management practices to ensure that the State's rail assets return maximum benefit to the public.

# Asset Management Principles for State Rail Assets

<b>Freight Rail Lines (Short Lines)</b>	<ul style="list-style-type: none"><li>• State should be owner of last resort and should encourage private ownership and/or operation in conjunction with Rail Improvement Districts if public involvement is warranted.</li><li>• Purchase decisions should be based on benefit-cost analysis.</li><li>• Operate lines in conformance with business plan that specifies projected customer base and monitors performance measures (carloads carried, revenues earned, and return on invested capital) against specified benchmarks.</li><li>• Implement inventory maintenance and monitoring system with periodic inspections and assessments of condition. Use annual and life-cycle costs as performance measures.</li><li>• Third-party operating agreements should specify obligations of operator with respect to meeting specified performance benchmarks.</li></ul>
<b>Freight Railcars</b>	<ul style="list-style-type: none"><li>• Implement inventory and equipment tracking system.</li><li>• Track location of each car (using global position systems where feasible).</li><li>• Track usage by Washington State shippers, including level of revenue service.</li><li>• Specify periodic condition inspections.</li><li>• Adopt performance measures and benchmarks, including costs of operation and maintenance per revenue mile and life-cycle costs.</li></ul>
<b>Miscellaneous Rail Equipment</b>	<ul style="list-style-type: none"><li>• Develop inventory of equipment and conduct condition assessment.</li><li>• Over longer term, consider disposal of the equipment and outsourcing the activity to the private sector.</li></ul>
<b>Passenger Train Sets</b>	<ul style="list-style-type: none"><li>• Continue with current Amtrak asset management program.</li><li>• Investigate approaches to develop a sinking fund to cover depreciation of train sets that would be protected from use in meeting general fund current obligations.</li></ul>